[c20] A client computer comprising:

a dial-up client providing dialing services to the client computer;

a client-side cryptographic function providing cryptographic services located on the client computer;

a custom script dynamically linked library providing an interface between the dial-up client and the client-side cryptographic function; and

a card reader attached to the client computer for reading a security device.

[c21] A server comprising:

a server-side cryptographic function providing cryptographic services located on the server; and

a PKI-Bridge providing an interface between the server and the server-side cryptographic function.

[c22] The server of claim 21, further comprising:

a directory service accessed by the server-side cryptographic function.

[c23] A server comprising:

a server-side cryptographic function providing cryptographic services located on the server;

a PKI-Bridge providing an interface between the server and the server-side cryptographic function; and

a directory service accessed by the server-side cryptographic function.

[c24] A method of integrating via a dial-up interface, comprising:

sending session initiation information from a dial-up client to a PKI-Bridge;

checking session initiation information by the PKI-Bridge;

generating a challenge string by a server-side cryptographic function;

forwarding the challenge string to a custom script dynamically linked library;

forwarding the challenge string to a client-side cryptographic function from the custom script dynamically linked library;

retrieving a private key from a security device;

generating a response string;

signing the response string with the private key of a dial-in user;

forwarding a signed response string to the custom script dynamically linked library;

dividing the signed response string into packets;

forwarding packets to the PKI-Bridge;

reconstructing the signed response string from packets;

forwarding a reconstructed signed response string to the server-side cryptographic function;

obtaining a public key of the dial-in user; and

verifying the reconstructed signed response string using the server-side cryptographic function.

[c25]   The method of claim 24, further comprising:

reading the security device by a card reader.

[c26]   The method of claim 24, further comprising:

encoding the signed response string.

[c27]   The method of claim 24, further comprising:

decoding the signed response string.

[c28]   The method of claim 24, further comprising:

forwarding the challenge string to the dial-up client; and

forwarding the challenge string to the PKI-Bridge.

[c29] The method of claim 24, further comprising:

forwarding packets from the custom script dynamically linked library.

[c30] The method of claim 24, wherein the security device is a smart card.

[c31] The method of claim 24, wherein the session initiation information comprises version information and a distinguished name.

[c32] The method of claim 24, wherein the public key is stored on a directory service.

[c33] The method of claim 32, wherein the directory service is lightweight directory access protocol compliant.

[c34] A method of integrating via a dial-up interface, comprising:

sending session initiation information from a dial-up client to a PKI-Bridge;

checking session initiation information by the PKI-Bridge;

generating a challenge string by a server-side cryptographic function;

forwarding the challenge string to a custom script dynamically linked library;

forwarding the challenge string to a client-side cryptographic function from the custom script dynamically linked library;

retrieving a private key from a security device;

generating a response string;

signing the response string with the private key of a dial-in user;

forwarding a signed response string to the custom script dynamically linked library;

dividing the signed response string into packets;

forwarding packets to the PKI-Bridge;

reconstructing the signed response string from packets;

forwarding a reconstructed signed response string to the server-side cryptographic function;